

Appln No.: 10/661,444
Amendment Dated: September 6, 2007
Reply to Office Action of March 6, 2007

REMARKS/ARGUMENTS

This paper is filed in response to the Office Action mailed March 6, 2007 for the above-captioned application. A three-month extension of time is herein requested in order to timely file this paper. The Commissioner is authorized to charge deposit account number 50-3618 for any fees deemed due.

The Examiner has maintained the rejection of all claims of the present application under 35 USC § 103(a) as obvious over Adams in view of secondary references. The Examiner also issues a new rejection to the claims under 35 USC § 112, first paragraph. Applicant respectfully traverses these rejections.

Applicant adds new dependent claims 21-25 to the present application to claim additional subject matter not specifically claimed in the original application. No new matter has been added and support for these amendments can be found throughout the specification. New claim 21 is dependent upon claim 20 and recites that the liquid is a carbonated beverage. *See* page 8 lines 18-25 of the specification. New claim 22 contains the same limitations as claim 1 except that the limitation regarding the non-biaxial orientation of the polyester has been removed. Instead Applicant adds the limitations of: claim 3 describing the method of manufacture of the polyester (*see* the specification at page 7 line 6 to page 8 line 17); claim 4 describing the optional reinforcing hoops (*see* the specification at page 7 line 28 to page 8 line 5); and claim 12 describing a wall thickness of 2 to 4 mm (*see* page 9 line 4 of the specification). New claim 23 is dependent on claim 22 and illustrates that the polyester is PET, PBT, or a combination thereof. *See* page 3 line 20 of the specification. New claims 24-25 are also dependent upon new claim 22 and illustrate that the polyester is reinforced with chopped fiberglass. *See* page 8 lines 5-6 of the specification. Applicant also amends claim 4 of the present application to correct a typographical error made in the Markush listing. No new matter has been added by this amendment.

Appln No.: 10/661,444
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The 112, first paragraph rejections

The Examiner rejects claims 1-20 under 35 USC 112, first paragraph as failing to comply with the written description requirement. The Examiner concludes that the added limitation of “polyester that is not biaxially oriented” is not supported in the specification. However, the Examiner has provided no evidence to contradict this statement or support his conclusion. Instead the Examiner simply states that, “this disclosure is not specific enough to warrant a conclusion that the materials produced are not biaxially oriented.” *See* the office action at page 2.

Applicant submits that the Examiner cannot ignore, as he has done here, the declaration evidence provided in this case. As detailed in paragraph 3 of Applicant’s 132 declaration filed on November 2, 2005, it would be apparent to a person skilled in the art that from the methods described in ¶¶ 029 - 033 of the present application that “the containers of the present invention are not biaxially oriented.” The added limitation reflects an inherent characteristic of the containers of the invention as described in the specification. Absent some showing by the Examiner that contradicts this statement, the Examiner must take it as true.

To further demonstrate the non-biaxially oriented nature of the polymer of the present invention, Applicant attaches as Exhibit A to the present response a printout from Wikipedia.com illustrating what a “biaxially oriented” polymer is. *See* Exhibit A. To form a biaxially oriented polymer, it is necessary to work the material in at least two directions. This can be accomplished by extruding the polymer onto a roll and then subsequently rolling or drawing the polymer in a lateral and a traverse direction. *Id.* The processes used to produce the containers of the present invention, as detailed in paragraphs 29 to 33 of the specification do not include working the material in at least two directions. Therefore, the containers of the present invention **CANNOT BE BIAXIALLY ORIENTED**. Therefore the Examiner’s 112 rejections to the claims should be withdrawn. Notwithstanding this argument, new claims 22 and 25 have been added that do not contain this limitation.

Appln No.: 10/661,444
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The 103 rejections:

The present invention is premised upon the unexpected finding that reinforcing fibers disposed in non-biaxially oriented polyester at high fiber loading levels contribute to both the reduction of gas permeability **as well as** the enhanced structural integrity of the polyester. *See* paragraph 4 of Applicant's 132 declaration filed on November 2, 2005. The claims of the present application are directed to this unexpected finding and provide containers with superior properties to those of the prior art.

Claims 1-9, 20, and new claim 21 are directed to containers made of non-biaxially oriented polyester with reinforcing agents disposed within the polyester. New claims 22-25 are directed to similar containers having a wall thickness of 2 to 4 mm. These containers are subject to the proviso that upon being filled with a liquid having a dissolved carbon dioxide content of about 0.4 - 0.6 wt % at an internal pressure of at least 1 bar, the container maintains a dissolved carbon dioxide content of at least 0.25 wt % after 0.5 year at a storage temperature of about 30 to 35 °C. Claim 10 is specific for a container having a specific permeability and claims 11 -19 are specific for a container having certain weight percentages of reinforcing agents.

In rejecting the claims as obvious the Examiner cites Adams in view of: Mori; Mori and Duse; or Mori, Duse, and Zimmerman. As a first matter, Applicant resubmits that the cited references are non-analogous to the present invention and to each other. Applicant's arguments regarding this matter that were presented in previous responses are incorporated herein by reference. Adams discloses containers for the storage of high pressure and cryogenic gasses. These are not the containers of the present invention and they are not the containers of Mori and Duse. Furthermore, Mori and Duse are specific for biaxially oriented containers. These also are not the containers of the present invention.

Even if the references were analogous art to the present invention, the combination of Adams and any of the secondary references does not arrive at the presently claimed invention. In response to Applicant's previous arguments against the determination of obviousness and the teaching away of the secondary references from the present invention, the

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Examiner indicates that the secondary references *are only* cited for disclosing that polyesters are known compounds for improving the gas barrier properties of containers and for showing that it is known to add reinforcing agents to polymer bottles. The Examiner then indicates that Applicant “cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.” *See* the office action at page 4-5. In making this statement the Examiner ignores the broader teachings of both Mori and Duse.

Applicant reminds the Examiner that he must consider the prior art and its teachings **as a whole**. *In re Ehrreich*, 200 USPQ 504, 509-510 (CCPA 1979). Mori does not mention nor does it provide disclosure of any values or examples that demonstrate how to reduce the transfer of carbon dioxide gas from a liquid phase to the gas phase through the non-oriented reinforced polyester container wall as illustrated above. Mori only cites US 3,733,309 which discloses that a bottle may be made from biaxially oriented polyethylene terephthalate. Applicant notes that the bottles of the '309 patent (and also of Mori) have creep properties (i.e. properties related to gas permeability and thus its shelf life with respect to the loss of carbon dioxide content) **which are substantially** worse than the containers of the present invention. In particular, the bottles of the '309 patent show creep of less than 5% after 90 days. *See* the '309, column 16, line 71 - column 18, line 1). The containers of the present invention are have improved properties. In particular, the containers of the present invention have creep less than 3% after half a year (i.e. less creep in twice the time). *See* ¶ 35 of the present application.

Duse teaches away from the present invention. Duse **teaches the drawback** associated with adding fiber reinforcing agents at any significant level to materials that are to be stretched and blown to produce biaxially oriented products. *See* column 1, line 65 to column 3, line 20. The invention disclosed in Duse is the discovery that fibers with specific properties can be introduced into bottles, like that of Mori, that are biaxially oriented and achieve increases in strength when incorporated in amounts of between 0.3 and 5 wt. %. *See* column 3 lines 23 - 34.

Appln No.: 10/661,444
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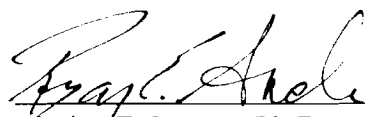
This is not the present invention and discloses nothing about improved carbon dioxide permeability properties.

Duse teaches of the problems attributed to and the general unsuitability of using high fiber loading levels in “biaxially oriented polyester containers”. These problems **are not** observed in the “non-biaxially oriented reinforced polyester containers” of the present invention. In fact the opposite has been found. As illustrated in the previously filed Rule 132 declaration, at higher levels of fiber loading than disclosed in the actual examples of Duse (i.e. at 15 wt. % and 50 wt. % fiber loading), Applicant has found that the fibers themselves actually contribute to the reduction in gas permeability as well as to the strength of the container, and thus achieve materials that have superior performance compared to the materials of the prior art.

Zimmerman is cited only for providing a reference that teaches polyester with 20-50 wt % glass fiber. It does not overcome the deficiencies of the combination of other references set forth above, *inter alia*, and Applicant submits that the rejections to these claims is likewise overcome.

For these reasons, Applicant submits that all of the claims of this application, as amended, are in form for allowance. Favorable reconsideration is respectfully requested.

Respectfully submitted,



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